252 They may not heat camel's milk which has just been milked
825 under penalty of causing sickness to the animal which gave it.

264 Insofar as personal interdicts are concerned, there are none to speak of, for although men and women must not eat together, this is a custom rather than an interdict.

[606] A married man must not eat with his parents-in-law, and the oldest son must not eat with his father. These are mainly marks of respect, perhaps traces of ancient practices of a religious nature.

/240/ Chapter 4

Hunting and Fishing

080 We shall now say a few words on the industries allied to the problems of food, that is, on hunting, fishing, animal husbandry, and agriculture.

136 Hunting. -- In a country where fauna was at all dense, hunting
174 would have brought a not inconsiderable dietary supplement to the Ihaggaren. In the past it was very much esteemed in the Sahara. Many rock drawings and paintings prove this, for they depict hunting scenes which interpret the state of civilization of the men, their preoccupation, and at the same time the nature of the fauna, which has changed a great deal since then.

[132] Today, with the very advanced drying out of almost all the
224 Saharian districts, the fauna has come out into the open and the species likely to be usefully hunted are reduced to a few. Only gazelles and wild sheep are still hunted. We cannot mention the addax and oryx antelopes, for the former is in the process of becoming extinct in the Sahara, while the second is confined to the steppe zone. The hare and jackal may be accessorily added.

these saddle camels, one may not, therefore, refer to a particular breed /race/ adapted for speed, as one may commonly hear spoken of.

The camel has a well determined exchange value among the Tuareg. It is one of the bases for comparison in their commercial transactions.

Each tribe marks his animals with a particular sign, and /251/ the owners who have many camels also have their own signs, marked with a hot iron on one of the parts of the animal's body -- neck, cheek, or thigh.

The sheep. -- Sheep are raised only accessorily in the Ahaggar, because grass is not abundant enough. But it occupies a large place in Sudanese animal husbandry.

It is a very peculiar animal with short hair and a long tail. It stands tall, a characteristic which has won for it the name of Ovis longipes. The Tuareg certainly introduced it into West Africa. Zoologists never refer to it except as Tuareg sheep. Its antiquity in North Africa is well known. The ram of Ammon is pictured with its characteristic form, and it is also recognizable in the splendid rock drawings of Géryville and Tiout. It seems to descend from the Corsican wild sheep rather than from the Algerian wild sheep. Today it is an animal found exclusively in Tuareg camps of the Sudan or in their area of influence.

Sheep is the dish served at great feasts, and its skin is used as a ground rug, a blanket, or to make harnessing articles.

The goat. -- The goat is the mountain animal par excellence, as frugal an eater as can be, resisting both cold and heat, and able to be content with the meagerest pastures. It is thus quite natural to find many of these goats among the Ihaggaren.

/252/ The Ahaggar species is small with long black hair. In the Sudan it is different colors -- white and black, or red -- with short hair; it stands taller than the Ahaggar species and is often crossed with the dwarf female goat in the southern tribes.

The origin of the goat is less certain than that of the sheep. Very widespread all over the world, it must have been domesticated at

136 several different spots, and it is not impossible that the species
[172] bred today in the Ahaggar is of African origin. Bones of the species are found in the Neolithic layers of the Sahara.

137 At the present time there is a death struggle between the goats
233 and trees in the Ahaggar. The goat itself is capable of browsing
185 the lower branches and destroying them, thanks to its agility. The Tuareg do the rest when pasture is scarce, by felling the main branches to put them within the reach of the animals. And so, in a relatively short time, trees, and the tahla (Acacia sp.) in particular, will be only a memory in the Ahaggar. Nothing has

[418
326
172]

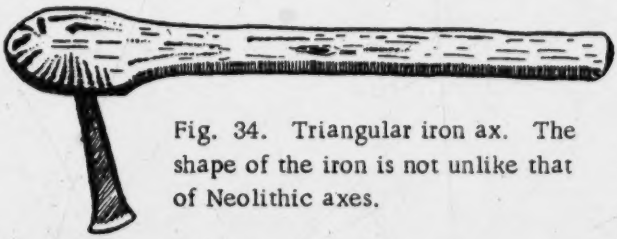


Fig. 34. Triangular iron ax. The shape of the iron is not unlike that of Neolithic axes.

been done by the French administration in the Ahaggar to protect the trees, when it would be sufficient to close some valleys for several years, while taking into account the needs of the shepherds. Measures of this kind have been taken in the environs of Goundam and have given very good results.

132 Prolonged dryness which causes a lack of pasture often puts
233 goat raising in difficulties. The birth rate is stopped short, and mortality may result to such a great extent that the number of animals sometimes falls to one fifth. Then many years are needed to build up the flocks, granting, of course, the arrival of favorable rains.

232 The careless and fatalistic Ihággaren do not even try to step up breeding by buying sires in Adrar or in Aïr. They let their weak flocks reconstitute themselves by their own means, which
[272] sometimes requires many years. In case of an overabundance of births, they limit the number of animals, for they are well aware

The ass is never eaten, and its skin is not used.

The horse. -- The horse is not a Saharian animal. In 1929 there were four horses in the Ahaggar belonging to the aménokal. Today there are about twenty of them belonging to the members of his family or to the notables of his camp.

This is an expensive luxury, for these animals must be fed with barley, and there is not enough barley for the people themselves. It tends to replace the camel for the Sudanese Tuareg.

/254/ The zebu. -- A few years ago the aménokal owned a small herd of zebus which he had had sent from the Sudan. This animal is not raised in the Ahaggar proper, and it could not be, for lack of appropriate pasture.

The zebus serve in the agricultural centers by drawing water. They are furnished to the tenant farmer by the proprietor of the land, and they are very poorly fed on hardship rations of hay and grass, or else they are put in rush pastures, which are generally plentiful in the agricultural centers.

When the animal is tired, the owner exchanges him if that is at all possible. The privations which the zebus must undergo bring about their death in a relatively short span of time, and so in the Ahaggar it is a question of keeping them alive rather than raising them. In any case, they never follow the camps in their moves and never live near them.

-

When we talked about the camp, we told how the search for pasture directed its location.

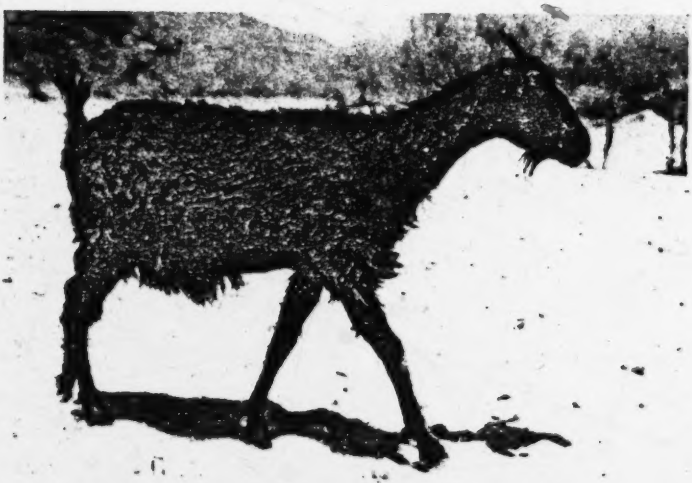
Insofar as animal husbandry properly speaking is concerned, we observe that the small animals -- sheep, goats, and asses -- always stay in the Ahaggar and move with the camp.

As for camels, this is not the case; they are often put out to pasture far from the tents, watched only by a few shepherds. The majority are even kept in the Sudan 800 kilometers from their owners'

1: Lhote--148a E-5 (1929-1940) 1944 MS25 Tuareg MS25

Plate XIII

●136



Long-haired Ahaggar goat. This species is localized in the mountain massifs of the Central Sahara (Ahaggar, Aïr, Adrar des Iforas, Tibesti).

[439] Daman sheep, or Tuareg sheep, very widespread in the Sahelian steppe, is also rather common in the Ahaggar, but it is raised there only accessorily. It is a very sturdy beast, and many caravaneers import them from Adrar des Iforas by making them cross the Tanezrouft. It is characterized by its long legs and long tail.

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Ahaggar
Air

paratively rich vegetation of Air contains species found also in Ahaggar, but Ahaggar has Mediterranean plants including several saline species which do not thrive in Air, where there are tropical or Sudanese species unknown to Ahaggar. 137

Botanically Air is very closely connected with the Sudan, and the mountain massif is within the Sudanese zone of summer rain. It is true that rain at the northern outskirts of Air occasionally falls in winter and may then give rise to scattered pasture of annual plants, but these rains are of no real importance. The important rainfalls of Air occur in the period June–September, and particularly in July and August. As may be gathered from the description of botanical conditions, Air has a much bigger annual precipitation than has Ahaggar. Thus the village of Iferouan in Northern Air has 74 mm, while Agadez at the southern slopes of the massif has 179 mm. Precipitation will of course vary from one year to the other, but rain will always fall sufficiently for the spring of annual plants. This is the reason for a type of stock-breeding different from that of Ahaggar. In Air the Tuareg are richer in camels, they do not possess so many goats but are very rich in sheep, and most of them have zebus. 132 137 [233]

The climatic and botanical differences of Air and Ahaggar can be seen more directly from the division of the year into seasons (fig. 2). Air has a summer and a winter season between which there are two seasons termed *akasa* and *ţarat*. These two words as seasonal terms express the fact that rain and annual pastures in Air are recurrent events, as the word *akasa* literally means "green annual plants", and the word *ţarat* refers to "dry annual plants". Both words are known also to the Ahaggar Tuareg but are by them not applied as seasonal terms, for in their country rain will not occur every year and may fall at most seasons. 132 805

Conditions for stock-breeding are very much better in Air than in Ahaggar, but the latter country has a few superior qualities:– 1) Part of the year Ahaggar has a comparatively cool climate which is said to have a positive influence on the lactation of domestic animals. 2) In Ahaggar all over the country there are saline pastures which play an important part in stock-breeding – not because these plants are very nourishing but the animals do not thrive without salt. In Air saline plants are very rare and found mainly to the south and south-west of the massif where water and soil also contain salt. Many pastoralists will migrate to these regions shortly after the rains, while people who do not undertake such migrations feed their domestic animals with salt. Camels and cows have a particular need for fodder with a salt content. 3) Ahaggar has richer wells and a greater number of permanent ponds than Air. This may seem rather peculiar as precipitation is much bigger in the south than in the north. In Ahaggar and Tassili-n-Ajjer some ponds may contain fish apparently unknown in Air. In the latter country there are a great many ponds or even small lakes during the rains but they dry out very quickly when rainfall ceases. Water in Air most of the year is drawn from wells many of which go dry during the hot season; this will frequently lead to quarrels between nomads. 233 [132] [135] [137] [221] 312 [136] [578]

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Ahoggor
Air

262 [222] Even when grazing is good stock-breeding products are less important for food in Ahaggar than in Air as is illustrated in fig. 3 depicting the relative importance of milk food and vegetable food. A small part of the vegetable food is provided by collecting seeds of grasses and herbs, while roots, stems, and berries of wild plants are less significant. The bulk of Tuareg plant food consists of millet, barley, wheat, and dates. In Ahaggar many Tuareg have gardens with wheat and barley cultivated for them by black-skinned agriculturists generally known by the Arab word *Haratin* (*Izzegaren* to the Tuareg). But most Ahaggar Tuareg acquire the bulk of their plant food from caravan trading with the oases of Tidikelt (dates) and with Sudanese villages as far south as Zinder (millet). Even in years of drought they can obtain millet from the Sudan in exchange for rock-salt broken at Amadror north-east of Ahaggar. In Air caravan trading with salt seems less necessary to Tuareg subsistence, although there are also in this country Tuareg who trade with salt from Amadror or Bilma. Most pastoral households however have a fairly regular surplus of livestock, butter, and cheese which can provide for the necessary amount of millet bought in Agadez or south of the massif in Damergou. There are also in Air a great many negroid agriculturists from whom pastoral Tuareg can buy vegetable products. But millet, which forms the prominent part of Tuareg plant food, is grown to a very slight extent by the agriculturists of Air. Dates are important in particular to the Ahaggar Tuareg who acquire large quantities from the oases of Tidikelt. There are also a few Ahaggar clans the members of which own half-wild palms with dates of an inferior quality, as there are Tuareg who have a few palms growing in their garden plots. In Air dates are not so important for food but even there pastoral Tuareg may have some palms. Among the Tuareg of Tassili-n-Ajjer it is very common for pastoralists to sow wheat and barley in the river valleys when these have been heavily flooded (Nicolaisen 1954, p. 83, 88), and this primitive agricultural method was apparently known also to the Ahaggar Tuareg in the past (Duveyrier 1864, p. 372). More recently many pastoral Tuareg of Ahaggar and Air have taken up agriculture by means of irrigation. There seems to be a tendency towards semi-nomadism among the Tuareg who are very dependent on vegetable food derived from agriculture.

[241] [563] 438 262 [234] [563] 241 262 [438] [312] [221]

The Negroes Of The Sahara.

●136 In the above section on Tuareg ecology it is stated that Air climatically and botanically is closely linked with the Sudan. This is true also zoologically as the Air fauna contains a great many species of birds and mammals characteristic of tropical Africa. The bird life of Air seems very akin to that of the Sudanese savannah, and, for instance, guinea fowls are extremely common even in valleys of the northernmost parts of the massif. As examples of tropical mammal life in Air we may here mention that the wart-hog lives in Central Air, and that oryx antelopes

[Text continues on p. 76]

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Ahaggar
Air

and giraffes are found in the plains immediately south and west of the massif. I do not wish here to compare in detail the natural history of Air and Ahaggar. But I wish to emphasize the fact that climatically, botanically, and zoologically an important dividing line runs between these two Tuareg countries. This should not be overlooked in an anthropological description of these parts of Northern Africa.

At present both fair-skinned Europids and black-skinned negroid people live all over the Sahara, and are frequently mixed. There seems to be little doubt that in the north most negroes have come in with the slave trade. We cannot entirely exclude the possibility that part of the northern negroes constitutes an ancient population of the Sahara (cf. Capot-Rey 1953, p. 167ff.), but in Ahaggar the negroes seem to have arrived later than the fair-skinned Berbers. Until a hundred years ago all negroes of Ahaggar where apparently Tuareg slaves bought or captured in the Sudan, but the negroid Haratin then immigrated from Tidikelt to make gardens for the Tuareg. They introduced the irrigation systems known to the Tuareg as *efeli*, to the Arabs as *foggara* (i.e. irrigation by means of subterranean aqueducts), but the solid houses built of mud *(tayahamt)* so characteristic of the northern oases were apparently not introduced by the first immigrants of Haratin, but later. Another immigration of negroid agriculturists came from Tassili-n-Ajjer and in particular from the oasis of Djanet. It is not quite certain whether they came before or after the Haratin. They are said to have introduced irrigation by means of wells *(tanout)* from which water is drawn by zebus (or donkeys), and two particular types of dwellings are also ascribed to them, namely a subterranean or semi-subterranean dwelling *(edamous)* and a square hut *(ekeber)* covered with straw or rushes. Immigrations of predominantly negroid agriculturists from Tidikelt and Djanet take place also in modern times, but all the present agriculturists do not descend from immigrants of these regions. A large part of them are descendants of Tuareg slaves manumitted by their masters.

Negro slaves have also been introduced from the Sudan to Air by pastoral Tuareg, but there is no doubt that Air originally was a pure Sudanese country anthropologically, as it is Sudanese with regard to climate, botany, and zoology. In other words, the oldest known inhabitants of Air were negroes while the fair-skinned Berbers have arrived at a later date. It is stated both by Nicolas and Urvoy that Air before the Tuareg was inhabited by negroid Hausa or Proto-Hausa (Nicolas 1950a, p. 45. – Urvoy 1936, p. 138ff.), and Barth claims the word *Air* to be relatively late and of Tuareg origin, the word *Azben* also used as a name of the massif to be of Hausa origin and older (Barth 1857, I, p. 369). My investigations fully confirm these statements. All Tuareg questioned about the history of Air seem to admit that the negroid agriculturists have lived in the country before the Tuareg, and there are in the Berber dialect spoken by these people a great many Hausa words. It is, I think, of particular interest that the negroid village population of Air is said to have a kinship system quite distinct from that of all true Tuareg while

137 /30 cont./ In the central Ahaggar, the Atakor, and the Tefedest, a zone of high elevation, one sees plants of Mediterranean origin, such as the wild olive (Olea laperrini) and the oleander. Artemisia and the "takamezout" of the Tuareg are also characteristic of this region.

At a lower level, in the zone which surrounds the central massif, the Sudanese influence is manifested in trees and shrubs such as the thora, the tebourak, and various kinds of acacias, the tabrakat and the morakba. One also sees there Saharan plants: the palm, the fersig, the drinn. And there are some traces of the Mediterranean influence: artemisia, oleander, and reeds. In brief, it is a zone of transition.

The vegetation of the peripheral trench is purely Saharan: a little acheb grows on the regs when it rains; the drinn, the had, and the guetaf invade the wadi beds. One also finds, here and there, morakba and a few tahlas.

The tassilis of the north, with their humid and well-boxed-in wadis, have a flora with Sudanese affinities along with Mediterranean and Saharan plants, while in the southern tassilis and the Adrar des Iforas the influence is very clearly Sudanese. In these latter two regions, the tahlas, still scattered, grow on the slopes outside of the wadis. In the wadi beds, one sees numerous tebourak, some thoras, tabrakat, and various acacias. The morakba grows abundantly in the small ravines as well as in the large wadis. Lastly, a luxuriant growth of gergir, reminiscent of the prairie, covers the wadis after it rains.

In the region of high altitudes, one sees mosses and lichens, as well as mushrooms. After rain, terfes (Saharan truffles) develop.

Near running water, one notes the presence of a special flora: mosses and lichens, false mint, reeds, rushes and tahlis, and couch grass grow profusely. The water itself contains algae and various aquatic plants.

• 136 /31/ The diversity of the flora would lead one to expect a great variety of fauna. Saharan animals do, in fact, live

136 /31 cont./ next to those habitually found in Mediterranean zones or on the Sudanese steppes. Some are frequently found in the Ahaggar or are often spoken of by the natives.

The gazelle (alenkad), a small, elegant, delicate animal, is found almost everywhere, from the first spurs of the Mouydir up to the frontier of the Niger. It likes pastures of alommoz, a small grass that quivers in the slightest breeze; this is why gazelles are particularly numerous in the Tin-Zaouaten region and in the wadis bordering the Tanezrouft. At certain times of the year, it is not unusual to see herds of 50 head.

[224] The gazelle is protected by hunting laws, but it protects itself even better by avoiding the regions inhabited by man. Because of this, the number of these animals seems to be almost constant.

Nearly all the mountains of the Ahaggar harbor wild sheep (oudad). This splendid animal, characteristic of the country, haunts all the peaks, even those seemingly inaccessible.

136 The Tuareg formerly hunted wild sheep with spears; they
224 now use rifles. A small tribe, the Ibardjien, were specialists in this sport; with their dogs trained for this work, the men tracked the game and dispatched it with spears. This tribe is dying out, and this type of hunting will disappear with it. The Adjouh n'Téhélé and the Dag Rali kill a few animals during the year, either with rifles or by trapping them with a noose tied to a log.

136 It is difficult to determine with any degree of accuracy whether the number of wild sheep is increasing or decreasing.

There are practically no antelopes still living in the Ahaggar; only a few rare individuals ascend the valleys of the Adrar des Iforas and are seen at the edge of the southern tassilis.

The most widespread of the carnivores is the jackal. One sees it everywhere, on the lookout for wounded gazelles, following the tracks of small animals, avidly eyeing the herds /32/ of goats. The presence of this animal is a veritable nightmare for the young mountain shepherds.

●136 /32 cont./ A cruel fox, smaller than the jackal, is sometimes found in the sandy regions of the great regs or at the approaches of the tassilis. This is the fenec.

No doubt the most curious animal of this region is the cheetah, or amayas. One rarely sees more than its tracks, and it is very hard to encounter. The cheetah is a true nomad, which hunts over enormous distances.

The Tuareg highly prize its skin, with which they ornament their saddles.

The striped hyena is rather rarely seen in the Ahaggar. It is more numerous in the tassilis and in the Adrar des Iforas.

In the mountains and, above all, close to agricultural areas, wild cats abound. These are handsome animals, the size of a very large domestic cat. Voracious and cruel, they play havoc with the poultry of the harratin /the Negro group which does the gardening/.

The Tuareg often speak of a wolf that was seen in times past in the Ahaggar. The folklore also speaks of a ferocious animal, the cynhyena, which lived in packs. (Colonel Augiéras reports that bones of the cynhyena have been found in the Timissao region).

Small rodents are found in great numbers in the pastures. Hares and rabbits feed on aromatic herbs which give their flesh a peculiar flavor.

Rats of all sizes and countless mice are found near the tents, and they often damage the leather sacks in which the grain is kept. The tilout, a rat with no ears and with very long, pointed claws hides among the rocks of the Atakor. Another curious animal, the daman, lives in packs among the great granitic rubble. According to scientists, this animal may be related to the rhinoceros, for the female has a linear placenta. It is about as big as a large rabbit and is exceedingly timid.

All the pasturelands of the Ahaggar teem with birds which eat the grain, above all the gergir. Thousands of them may be seen taking off when one crosses a prairie.

•136 /33/ Near the water points, numerous insect-eating birds seek nourishment. Let us mention in particular a gray swallow which lives the year round in the Ahaggar, and a charming black and white bird, the moula-moula, which is considered [825] a messenger by the Tuareg and which accompanies travelers, rapidly becoming very tame.

At Tamanrasset, Bengalis (mange-mil /literally: "eat-millet"/), imported from Agadez, breed rapidly and populate the gardens, which they ornament with their red plumage.

Crows are seen almost everywhere. Vultures soar very high, so high, say the Tuareg, that the sun burns their head feathers, and when an animal dies in the desert, the rapacious birds arrive mysteriously from "nowhere."

Falcons and buzzards circle over the pasturelands in search of food.

Reptiles abound in the Ahaggar. Snakes and vipers live in and around the wadis, burrowing among the clumps of thorny vegetation and tree roots. The Tuareg fear everything that crawls. Several types of vipers (tachilt) live in the Ahaggar; some are gray, others tawny (horned) or spotted. One may encounter, but rather rarely, a sort of cobra called hench-lefel. Some snakes grow to be more than a meter long.

Lizards of all sizes live in the most desolate places. One kind, small, sand-colored, flees terrified at the approach of man in the wadis and on the regs.

The dob prefers rocky places. With its large, spiked tail, this animal has an antediluvian aspect. It plays a very im-portant part in Tuareg stories. Children play with it as with [262] a toy. Its flesh, considered edible, is far from tasty.

The uran, a large gray lizard, possesses a redoubtable weapon in its long, flexible tail. The Tuareg call it their [825] maternal uncle and ascribe to it dauntless courage. It is said that the uran attacks nobles but /34/ refuses to fight Negroes; [262] the latter eat the flesh of the uran, having no kinship tie with it.

136 /34 cont./ A green lizard with a red head is often glimpsed on the rocks: this is the materter. It seems to be saying a continual prayer, nodding its head up and down. The Tuareg [825] claim that its bite is fatal but are contradicted by zoologists on this point.

Large numbers of toads live in the irrigation ditches; tadpoles are found in nearly all water points.

The large gueltas /pools/ such as Issakarassène, Afilal, Amguid, Arak, etc., contain fish: barbus sahari. These barbels run the risk of disappearing during violent floods.

Some water points, at Tamanrasset in particular, are stocked with gambusia, useful for eating mosquito larvae. Some say that the In-Outer guelta, situated upstream in the Tit wadi, once was inhabited by a crocodile. This claim is not to be rejected a priori if one considers the discoveries made in the Ajjers /Adjjer/ of "residual" animals.

Insects are clearly the most important of the Ahaggar's fauna. They are found everywhere, even in places which seem totally devoid of life.

Beetles are the region's largest insects; they leave orderly little dotted tracks on the sand. A green beetle, the zembabar, looks truly ornamental.

The ankokar, a large poisonous wasp which frequents the vicinity of water points, inflicts dangerous stings; the Tuareg fear it and say that several stings may cause death.

Ordinary flies are the best adapted animals in the Ahaggar, as in all the Sahara. They swarm at agricultural centers, where they are carriers of eye diseases. When one halts on a barren reg, it is a surprise to find oneself surrounded by a cloud of flies, come from heaven known where.

Butterflies fly around the gardens and pastures; moths describe thousands of ellipses around the lamps.

/35/ Ants of all sizes, ticks, mantes, dragon flies, mosquitoes, termites, and many other small insects fly and

136 /35 cont./ circle everywhere, among the plants of the wadis, around the rocks in the mountains, on the trees, and in the guemouns /cultivated squares/ of the gardens, as well as near the water points.

The gueltas harbor an entire, very varied, aquatic fauna; the moist soil shelters a quantity of insects, larvae, and worms.

Lastly, scorpions are encountered almost everywhere, yellow or black, small or large. The Tuareg fear them. It appears, however, that the sting of the Ahaggar scorpion is not fatal; it causes a high fever, varying according to the individual victim, the time of the year, and the amount of venom injected.

To my knowledge there is no any complete scientific study of the Ahaggar's fauna.

/37/

II

The People of the Ahaggar

172 One can say nothing very exact about the origin of the present populations of the Ahaggar, and less still on that of the populations of past centuries. However, we may be permitted to sketch a picture, a rather hypothetical one, of what the Ahaggar could have been in the remote past, although it is not possible to assign any certain chronology to the different periods.

The only positive knowledge we have of the prehistory is furnished by collections of tools, by the study of rock figurations, by results of excavations of pre-Islamic tombs, and by geological and paleoclimatological contributions. The oral traditions handed down by the Tuareg are not of much use, for they are rare and deal largely in myths.

6:Blanguernon Y-5 (1937-1954) 1955 MS25 Tuareg MS25
Hoggar

● 136

15. A uran.

[p. 200]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

tamat, Acacia seyal) and tamarisks (*tabarekkat, Tamarix aphylla & azawa, Tamarix gallica* and related species). Other important perennial species are the grasses *afezu* (*Panicum turgidum*) and *tullult* (*Aristida pungens*) the latter grass being found especially around the northern massifs of Anhet and Téfedest, and in Tasilé-n-Ajjer.

2) *Tarayin*, the middle mountain zone which has the following characteristics:— Acacias are lacking or are very rare and badly developed. The big tamarisk (*tabarekkat*) is lacking while the smaller species (*azawa, T. gallica*) is common in certain valleys. Two trees are found which do not grow in the lower zone, namely *tahunek* (*Rhus oxyacantha*) and *alew* (*Olea Lapperrini*). The *tullult* grass (*Aristida pungens*) is missing and the *afezu* grass (*Panicum turgidum*) is scarce.

3) *Atakor*, the highest part of Ahaggar with the following characteristics:— There are no trees with the exception of *alew* (*Olea Lapperrini*), and there are on the whole very few perennial species while annual species are abundant in case of rainfall.

It should be noted that only the important characteristics of the three Tuareg zones are here mentioned, and I add that a few perennial plants are found within all three zones. Thus the perennial species *aramas* (*Atriplex Halimus*) occurs along the valleys in all three zones, but it is of very low stature high up in the mountains, while it forms very high and bush-like tufts in the lower parts of the country.

In Ayr there is also a change of vegetation according to altitude but a general description of this is rather complicated. The lower parts of the Ayr Massif as well as the southern plains are dominated by acacias (*afagag, Acacia Raddiana & tamat, A. flava*) like the lower parts of Ahaggar, and the *afezu* grass (*Panicum turgidum*) is very common almost everywhere throughout the country, while the *tullult* grass is found only in sandy regions at the eastern slopes of the Massif. Species of tamarisks are extremely rare, and this is true of certain other species which are common in Ahaggar. The trees *tahunek* (*Rhus oxyacantha*) and *alew* (*Olea Laperrini*) grow only in isolated mountainous parts of Ayr. The extensive plains west of the Ayr Massif around Ingal are dominated by acacias and the *afezu* grass, but these perennial plants become less and less common towards the north, so that the regions around I-n-abanrerit have very little persistent vegetation but a rich vegetation of annual plants. For further information on the botany of Ayr I refer to the study of Miré & Gillet who describe all known species and indicate their division into particular vegetational zones (Miré & Gillet 1956). I conclude this outline of Tuareg botany with the statement that Ahaggar and Ayr have many important species in common. But there are northern species which do not thrive in Ayr while some southern species are unknown in Ahaggar, e.g., the dum palm *tagayt* (*Hyphaena thebaica*) which plays a great role with the Ayr Tuareg.

Climatically as well as botanically the Ahaggar Mountains are situated on the frontier of two distinct zones, namely the Mediterranean and the Tropical zones, while Ayr is predominantly tropical. This seems true also zoologically, as the Ayr fauna contains a great many species of birds and mammals characteristic of tropical Africa. The bird life of Ayr seems very akin to that of the Sudanese savannah, and, for instance, guinea fowl is extremely common even in valleys of the northern-most parts of the Massif. As example of tropical mammal life in Ayr we may here mention that the wart-hog lives in Central Ayr, and that oryx antelope and giraffe are found in the plains immediately south and west of the Massif. I do not wish here to compare in detail the natural history of Ayr and Ahaggar, but

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

* 492 181 [114] [539] of riders and their camels. This is intimated by the following poem quoted from Foucauld's excellent books on the poetry of the Ahaggar Tuareg:—

Ébeydeg, é ti n ami mellen	My white camel, O woman with white teeth
W-allahi! ideg ul ifel kem	I swear by God, it shall not go raiding, shall not leave you
Ula daṛ ikk am akal ien	It shall not go away from you to another country
U t ḍineṛ ar y arabuh ennem	I lead it to the pastures only to visit you with love again
Ula tahargit d asemmeḍren	Neither in dreams nor in thought
Innin é ham yekk akal ien	Shall it go away from you to another country

(cf. Foucauld 1925-30, I, p. 210 f. for a literal translation).

DONKEYS

231 [192] Donkeys are very important domestic animals in the Tuareg groups I have studied. Most animals are grey or greyish but there are other colours for which the Tuareg have special terms. From Ahaggar the following colour-terms can be mentioned:— *adebara* (greyish), *afawa* (greyish with a white stomach), *ewriṛ* (yellow-brown), *éhenbey*, or *takenbawt* (donkey with a black head), *ékawél* (black). Black donkeys seem to be more common among the Arabs of the Northern Sahara than among the Tuareg.

231 ● 136 Donkeys vary less in colour than other domestic animals among the Tuareg. It is interesting to note in this connection that there are fairly big herds of wild donkeys, or asses, in the mountainous massifs of Ahaggar, Tasilé-n-Ajjer, and Ayr. These animals are generally greyish like most domestic donkeys.

* 133 492 415

Fig. 83. Women carrying cereals in skin bags loaded on donkeys. Ahaggar, the *Dag Rali* tribe.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

492*

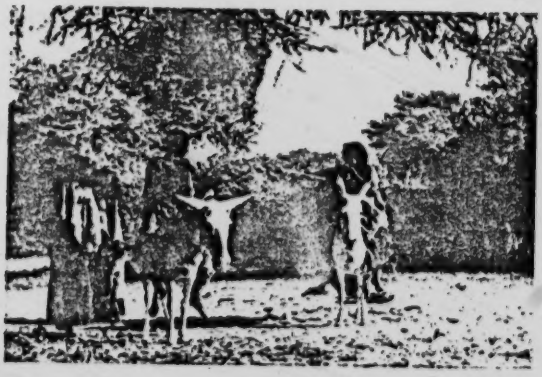


Fig. 84. Boy and woman mounted on donkeys. Ayr, the *Imezzureg* tribe.

But the wild animals are bigger, which the Tuareg ascribe to the fact that they roam freely in the desert and always can find the very best fodder – an explanation which seems reasonable as the Tuareg camp where fodder is reserved to their milk-yielding animals (cf. p. 491 ff.). It can be added that domestic donkeys are frequently tightly hobbled by means of a narrow rope (*téffart*) around their forelegs (Fig. 45) and sometimes also with another rope (*amahus* in Ahaggar) running from one foreleg to a hind leg.

If donkeys are not hobbled, there is always a great risk that they will disappear in the mountains and join the herds of wild animals. Unhobbled donkeys are often caught with great difficulty. They are sometimes driven together by the inhabitants of a camp, and when mares have foals it may even become necessary to run down the foals on riding camels in order to get hold of their mothers. In some regions where donkeys depend on water from deep wells it is customary not to give them too much water to drink, in which case unhobbled animals can always be caught at the well, where they will wait for water. But donkeys are very well fitted for desert life. They can do without water for several days even when weather is extremely hot, and where water is very near the surface so that the sandy soil is humid donkeys dig small holes with their hoofs to drink the water which quickly gathers in these depressions. I have myself witnessed this in Ahaggar where the Tuareg say that among domestic animals only donkeys are able to make such water-holes.

The Tuareg distinguish between the domestic donkey (*éyhed* in the north, *éyjed* among the Ayr Tuareg) and the wild donkey or ass (*ahulil* in the north, *émedrer* in Ayr), but they are well aware that there is no important distinction between them for many Tuareg even nowadays obtain domestic donkeys by catching wild animals. Wild donkeys or asses were hunted for domestication still more eagerly in the past, and there may perhaps be some connection between donkey-breeding and true hunting – that is hunting for meat. Nowadays the Tuareg never eat donkey's meat, nor do they utilize the skin of these animals. But it is known that the Ahaggar Tuareg have eaten donkey's meat in periods of hunger even fairly recently, and Duveyrier states that old animals caught in traps are killed for their

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

*492

Fig. 85. Tuareg breaking in a young newly-caught donkey. The donkey is prevented from escaping by means of hobble-ropes (*téffert* and *amahus*) and is also tethered to an acacia tree. Ahaggar, the *Ajjah-en-tehlé* tribe.

231
262
237
skin (Duveyrier 1864, p. 231). It is most possible that the taboo on donkey's meat and skin is due to Islam – meat of donkeys and horses is considered unlawful by the Ḳoran. Leo Africanus states that the nomads of the Sahara eat meat of donkeys which they catch in snares (Leo Africanus II, p. 944).

136
224
The wild donkeys, or asses, of Tuareg countries are very shy, and it is most impressive to watch a herd of some twenty animals galloping over the desert plains. Because of their shyness they are often hunted much in the same way as game animals. Among the Northern Tuareg they are caught in the spiked wheel-trap, are run down by men mounted on camels, or are driven into closed river valleys surrounded by steep rocky walls. In certain parts of Ayr wild donkeys can be caught in the same way – notably in valleys of Mount Tamgak (Northern Ayr) and around Anu Mekkeren (Central Ayr) – while the method of running down wild donkeys with riding camels is said not to be practised. Whether the so-called spiked wheel-trap is used for catching donkeys or not, I do not know, as the Ayr country is very extensive and inhabited by Tuareg of different origins. The Tuareg belonging to the *Kel Ferwan* group claimed that it was not used for donkeys or asses for which they have a kind of snare called *tayant*, which is also the name used among them for the noosed rope connected with the spiked wheel-trap. The snare used for donkeys is said to consist of a rope some twenty or thirty metres long and plaited from dum palm leaves. The rope is noosed at one end to be used as follows:— The loop is laid out where donkeys come to drink, the whole rope being covered with sand. The hunter lies hidden behind some natural object, a rock or tree, and when a donkey puts one of its legs within the loop he pulls the rope. It is said that this method is also sometimes used for other domestic animals which have gone wild, as happens frequently with oxen. But it is never used for hunting proper game animals such as gazelle, antelope, and barbary sheep. To catch domestic animals which have gone

231
224

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

231
415
284

Fig. 90. Tuareg dogs of the breed which is common among the Ayr Tuareg. Dogs suffer much from heat in summer when they hide under water-bags. Ayr, the *Imezzaveg* tribe.

DOGS

231 The Northern Tuareg distinguish between three types of dogs (sing. *eydi*) as follows:— (1) a long-haired breed (*aberhoh*); (2) a short-haired slender breed (*akhawi*); (3) a very slender and elegantly
[173] built greyhound (*oska*) (Fig. 91). The Ahaggar Tuareg speak of a tradition, according to which the greyhound (*oska*) was introduced fairly recently through contacts with the Northern Arabs. The Ayr Tuareg do not make similar distinctions between dog breeds. They have only one breed which is known as *iiji* (Fig. 90). It is short-haired and slenderly built though less so than the true Arab greyhound.

[136] Dogs are kept to guard the camp and in particular to protect the animals from the attack of jackals or hyenas during night. If the Tuareg had no dogs it would be most difficult for them to breed goats and sheep. Dogs may also follow the flocks in daytime to protect the animals against beasts of prey, though this is not generally considered necessary. Dogs are not trained as "sheep-dogs", but it is said that a few "intelligent" dogs will assist the herdsman in keeping the flock together during grazing,
[224] and many dogs will drive away domestic animals which belong to foreign flocks. Some Tuareg use dogs in hunting barbary sheep, gazelle, antelope, and hare (cf. hunting, p. 159, 166).

[17] It is well-known that the Arabs consider the dog an unclean animal. This is also so among Arab nomads of the Sahara, but they do not consider their greyhounds unclean in this sense. Thus pastoralists of the Chamba group told me that among them a fine greyhound is esteemed in much the same way as are noble riding horses and camels. The Tuareg have very few true greyhounds and
[521] I do not believe that they have this same feeling of interest in them. But many children and young
[541] people are fond of all types of dogs, and one can hear them discuss the qualities of their animals and the daily dogfights which are considered a kind of entertainment to everybody in the camp.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

the daily dogfights which are considered a kind of entertainment to everybody in the camp. Colour-terms are also used for dogs, and I have heard one Tuareg boy claim that he preferred dogs that were black and white. Adult people in general treat dogs differently, and they are frequently cruel to them, which may be due to Islamic influence which is on the increase among the Tuareg. Though the Tuareg may be cruel to their dogs they acknowledge that they are very "wise and intelligent". They say that the dogs are much like humans with the exception that they cannot speak. Therefore they should also be fed like humans, and they are given millet-porridge – with milk if the yield is abundant. The Tuareg kill their old and superfluous dogs by hanging them from a tree in a noosed rope, and they consider this method very effective.

CATS

The domestic cat is found in many Tuareg camps. It is generally termed *muchch* which is Arabic by origin. I believe that domestic cats have been introduced to Tuareg countries later than the Arab invasions and that they have been introduced by the Arabs. This is in agreement with Lagercrantz's statement that domestic cats in most parts of North Africa outside of Egypt are post-Arabian (Lagercrantz 1950, p. 65). Cats are allowed to live in tents and huts, and are well treated as among the Arabs. The Tuareg keep cats not only for pets to their children, but they much like to have them in their camps as cats catch numerous scorpions and also attack snakes.

Among sedentary people of Ahaggar and particularly at Tamanṛaset the hedgehog (*ékenisi*, or *tékenisit*) is sometimes kept in the house or within the courtyard as it hunts beetles and scorpions during the night. This custom of keeping tame hedgehogs is no doubt recently adopted from Europeans living at Tamanṛaset.

Fig. 91. A true greyhound (*aska*) patted by a negroid agriculturist of the *Kel Ĝunet*. Tasilé-n-Ajjer, the *Ouaren* tribe.

Hunting

For the pastoral Tuareg hunting is not an important occupation, and nowadays it is practised mainly by those few Tuareg who possess rifles or guns. Traditional hunting methods are thus of far less consequence than in the past, but some of them are very interesting and most significant for a historical analysis of Tuareg culture.

AHAGGAR

Northern Tuareg areas are not very rich in game. In Ahaggar the main types of game are the gazelle (*ahenkoḍ*, fem. *tahenkoṭ*; *Gazella dorcas* sp.) and the barbary sheep (*uḍad; Ammotragus lervia*). The big gazelle (*énir; Gazella dama permista*) and the addax antelope (*amellul; Addax nasomaculatus*) are very rare; they are occasionally seen in the plains outside of the mountains. The ostrich (*anhél; Struthio camelus*) was very common in the past, but is now exterminated.

The small gazelle is rare and shy within the Ahaggar Massif, while fairly abundant and comparatively easy to hunt with a rifle in the northernmost massifs and their surrounding plains. Of seven camps visited in Ahnet 1954, gazelle hunting was engaged in by the members of two households, and I estimate that they killed one or two gazelles every week. In most camps of the Northern Tuareg there are no true gazelle hunters, and when a rare gazelle is killed its meat is easily eaten in one day by the members of a single household – in addition to three or four pounds of wheat-bread or millet-porridge. Gazelle skin is of little practical value to Tuareg craft. It is not generally used for the manufacture of important domestic articles such as water bags and containers for milk and butter, but it is suitable and much esteemed for certain types of decorated leather work and for fine leather cords, e.g., necklaces for amulet cases, reins for riding camels.

Barbary sheep are extremely shy, and they live mainly in inaccessible mountains. They are still fairly common in certain isolated parts of the mountains, but they were more numerous in the past when hunting was practised without rifles.

The Tuareg estimate that the amount of meat obtained from two gazelles corresponds to the meat of one grown goat, while a big barbary sheep provides as much meat as that of four goats. Meat of barbary sheep is better suited for drying than meat of other game animals, and the thick hide of these animals is valuable for the manufacture of tents and for large bags used for the conservation on journeys of dates, grain, flour, and the like. The horns of barbary sheep are used as butter containers (Fig. 165), and some Tuareg add the powder of crushed horns to butter before heating it (cf. p. 222). Barbary sheep are of greater economic value to the Ahaggar Tuareg than other types of game, and

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

224 Tuareg are also aware of the use of poison. I have gathered no information about this myself, but
225 Lhote states that certain poisonous grain is used for the destruction of jackals and small rodents (Lhote 1951a, p. 43 f. & 132).

226 It is obvious that fishing cannot be an important industry to people of the Sahara, but fishing is practised in certain areas. One species of fish (*Clarias Lazera*) is found in a few permanent pools of Central Ahaggar, but it is particularly common in the numerous permanent ponds of Tasilé-n-Ajjer, where there is also another, perch-like species. I have myself caught and eaten both species. Duveyrier states that there are three distinct species in Tasilé-n-Ajjer:— (1) *asoulmeh* (*asulmey*) (*Clarias Lazera*); (2) *isattafen* (*i-settefen*); (3) *imanan* (pl. *imenan*) (Duveyrier 1864, p. 227, 238). Fishing is described
212 by Duveyrier as follows: "Les poissons des lacs de Mihero donnent lieu à une pêche qui contribue
515 à l'alimentation des serfs riverains. A cet effet, ils creusent sur les bords des lacs de petits canaux étroits, aboutissant à des réservoirs dans lesquels les poissons viennent pour y chercher une nourriture qu'ils ne trouvent pas dans les profondeurs des lacs. Quand ils y sont entrés on renferme les conduits et on les prend" (Duveyrier 1864, p. 238 f.). Another fishing method is described by Lhote: "Ils construisent des espèces de fascines avec des tiges de mrokba ou des branches de tamarix, puis, entrant à plusieurs dans l'eau ils forment une espèce de barrage au moyen de ces fascines en les mettant bout à bout et les poussent ensuite doucement devant eux. Ils prennent bien soin de drainer le fond de sorte que le poisson soit systématiquement chassé. Lorsqu'ils arrivent près de la rive opposée à celle d'où ils sont partis, ils poussent rapidement par un dernier effort et éjectent le poison sur le sable ou ils le ramassent. Ils recommencent ce manège plusieurs fois jusqu'à ce qu'ils aient capturé la majorité des poissons" (Lhote 1951a, p. 53). In Tasilé-n-Ajjer I was told about a third fishing method, namely the use of a piece of cotton (e.g., an old cotton shirt) attached to two poles. The cotton piece serves as a net over which the fish are fed. There seem to be no other fishing methods, as both the fish-hook and the harpoon are unknown.

AYR

● 136 The Ayr Massif with adjacent plains is very rich in game in comparison with the true desert country inhabited by the Northern Tuareg. Barbary sheep (*ejital*; *Ammotragus lervia Augusi*) are common in the mountains and also south of the Massif around the cliff known as *Falaise de Tigeddi*. Gazelle (*achenkod*; *Gazella dorcas* sp.) (*énir*; *Gazella dama permista*) and the addax antelope (*amellul*; *Addax nasomaculatus*), which are found in Northern Tuareg countries, are more abundant in Ayr where there are also bigger types of game, notably the oryx antelope (*ézem*; *Aegoryx algazel algazel*), and the giraffe (*arader*; *Giraffa camelopardalis*) which is found south and southwest of the Massif (e.g., around Ingal and Aderbissinat). The ostrich (*énhal*; *Struthio camelus*) is still very common in isolated regions of Ayr including the northern outskirts of the mountains, where I have seen flocks of more than twenty birds. There are in Ayr as mentioned above (p. 31) many bird species which are unknown or rare further north in the desert, e.g., the guinea fowl (*taylalt*; *Numida clappertoni clappertoni*) and a bustard species (*agayis*; *Choriotis arabs stieberi*). Game birds are extremely abundant in certain parts of Ayr. The birds come in amazing numbers to waterholes and open wells to drink in the evening at

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

133

Fig. 117. Fishing pool (*agelmam*) in Tasilé-n-Ajjer.

136 sunset. There are wild pigeons by the thousand and innumerable flocks of guinea fowls and partridges (*Alectoris* sp.). Two species of turtle-dove are almost as common in Ayr as is the sparrow in Europe. 224 Possibilities of hunting are much more favourable in Ayr than in Northern Tuareg countries, yet, 418 nevertheless, the Ayr Tuareg engage even less in hunting than do the Ahaggar Tuareg. One reason for this is perhaps that very few Ayr Tuareg possess guns. It is extremely rare to meet hunters in Ayr. 224 They are found mainly within one tribe, namely that of *Imedderaren* (or *Kel Tamgak*) living in the 433 Tamgak Mountains of Northern Ayr. I have myself never visited camps of these people, but all Tuareg 119 agree that they live largely as hunters and possess few domestic animals. Unfortunately, these people have never been studied in detail. Buchanan, who met a hunting band of these Tuareg in 1920, says 222 that they have neither goats nor grain, but live by hunting and the collection of wild edible plants (Buchanan 1921, p. 191), while Campbell, who met them at Iferwan in 1926, describes them as hunters who also breed goats and sheep (Campbell 1928, p. 204 f.). Rodd also states that the *Kel Tamgak* have goats and sheep, but that they do not possess camels (Rodd 1926a, p. 307). This is in agreement with information gathered by myself at Iferwan where I met a few Tuareg of this group. There are 224 no Ayr Tuareg who live exclusively by hunting and collecting. The number of game animals killed

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

222 Even in good years it may happen that edible seed-plants are eaten by locusts before they become
[134] ripe for collecting. Collecting is of secondary importance to the Tuareg of Ahaggar though to most
[433] pastoralists it is more important than hunting.

AYR

131 We have seen that Ayr has better grazing grounds and more game than Ahaggar, and it is only
137 natural that this southern area is also a more favourable one for the collecting of wild plants. Never-
222 theless, it seems as if collecting is not so important to the Ayr Tuareg who have more livestock for
[433] which millet and wheat can be obtained without much difficulty. The number of edible plants utilized in Ayr is probably a very large one. Thus it is said that certain *Kel Ewey* Tuareg collect many different plants, but my inquiries into the methods and the value of collecting were limited to Tuareg of the *Kel Ferwan* drum-group of Southern Ayr where the following species are collected for food: —

222 *afagag* (*Acacia Raddiana*). Pods of this acacia are dried and, after pounding in a large millet mortar,
262 mixed with milk to be eaten or drunk like the Tuareg dish known as *arejira* (cf. p. 245 f.).

252 *ebezgin* (*Salvadora persica*). Fruit is eaten without any preparation.

tadent (*Boscia senegalensis*). Berries are pounded in the millet mortar to obtain the limpid juice which is added to porridge.

[824] *tagayt* (*Hyphaene thebaica*). The dum palm, which is of extreme importance for the handicraft of the Ayr Tuareg, is also valuable as food. The young nuts are opened with a knife and the kernels are eaten. The old nuts have an edible outer coating which is eaten by children and even by adults when they are hungry. These old nuts are also pounded in the millet mortar together with seeds of *ageruf*, cf. below.

afezu (*Panicum turgidum*). This perennial grass is very abundant all over Ayr. Collecting of its seeds is done by rubbing the ears of the grass between the hands to allow the seeds to fall into a plaited bowl. Seeds are pounded in a millet mortar to be used for porridge.

ichiben, that is seeds of an annual grass – apparently identical with *Panicum longiflorum* and/or *P. spinosa*. The seeds are collected in two different ways: — (1) If the ripe seeds have fallen to the ground they are swept together with a bunch of straw. (2) The ears are cut with a knife to be threshed by pounding in a millet mortar. The seeds are highly esteemed, being collected to a greater extent than seeds of other wild plants. The seeds are used particularly for porridge, but also for certain other dishes such as *arejira* (cf. p. 245 f.).

ichit (*Eragrostis* ssp.). A grass yielding red seeds collected in the following way: — The ears are beaten with the hands so that the seeds fall into a plaited bowl. The seeds are used only for porridge.

wajeg (*Cenchrus catharticus* & *C. Priouri*). Annual seed-plants with thorny seeds. The dry plants are beaten with a stick and the fallen seeds are collected in a heap to be threshed with a stick. The seeds are pounded in a millet mortar for porridge.

ageruf (*Tribulus terrester*). An annual plant with thorny seeds which are collected as just described for the *wajeg* plants. The seeds are pounded in a millet mortar to be eaten without further preparation

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

241 I, p. 424). Rodd thinks the implement seen by Barth was clearly an importation from the north (Rodd
171 1926a, p. 133), and Feilberg assumes that if the plough was once known in this southern area it might perhaps have disappeared together with shifting cultivation (Feilberg 1931, p. 200). All this may be so, for there has been much contact between Ayr and the regions of Fezzan and Tripolitania in the past. But Barth does not say that he saw a plough but "a kind of plough", which may perhaps point to a type of large hoe drawn by men like that described from Senegambia by Feilberg (cf. Feilberg 1931, p. 169 f.).

243 The plough is unknown in the extensive area inhabited by pastoral Tuareg but this is not so with a kind of shifting cultivation. Pastoral Tuareg of Tasilé-n-Ajjer sow wheat and barley along the river valleys when these have been heavily flooded. Sowing is then done in a very simple way:— Holes are dug into the sandy soil, usually merely with the hand, and a few seeds are put into these holes. Wheat and barley thus sown grow in tufts with a space of 0.30 to 0.50 metres between each, and there seem to be about fifty straws in a normal tuft – the largest tuft I have seen contained about 130 straws (cf. Figs. 128–129). The plots cultivated in this way are generally very small, and the scattered wild plants growing in the plot are not always removed before sowing. The corn plots are left completely to themselves until harvesting, which is done with a sickle (Fig. 143). Primitive corn growing of this type cannot be practised continuously from one year to another in Tasilé-n-Ajjer, and the Tuareg of that region say that a household never grows enough corn in this way to meet its annual needs.

[178] The primitive method of corn growing without artificial irrigation is unknown in Ahaggar nowadays, but it seems as if it was known in the past (cf. Duveyrier 1864, p. 372), and the Ahaggar Tuareg have a particular term (*tawgest*) for a field cultivated without artificial irrigation (cf. Foucauld 1951–52, III, p. 1466).

Rodd states that rain-grown crops could be raised most years in certain parts of Ayr and that in earlier days a fair amount of cereals seems to have been produced in this way in Ayr (Rodd 1926a, p. 133). There is little doubt that this statement is correct, and I think that even in parts of Ahaggar millet could be raised without irrigation in most years, for millet has a very short period of growth.

[221] In Ahaggar (at Abalessa) it is sown in June-July and is harvested in September. Though millet plots are irrigated they are never watered much, and never to the same extent as wheat and barley which are grown in winter. In regard to Ayr, millet in southern villages of the Massif very frequently ripens in two months, and late in summer, at the end of the rains (*akasa*) or in the early dry season (*rarat*).

[252] I have frequently seen well-developed small plots of millet and sorghum around deserted Tuareg camps where a great many seeds are always lost on the ground during the pounding and winnowing of millet for porridge. These self-grown plots, however, are not utilized by the Tuareg as the comparatively

● [13] small yield is quickly eaten by the numerous millet-eating birds. Owing to these birds it would be difficult for pastoral Tuareg to grow cereals in flooded valleys like the Tuareg of Tasilé-n-Ajjer, and it is partly for this very reason that the sedentary agriculturists of Ayr grow very little millet. Millet could easily be raised without artificial irrigation during the rains, and, in fact, millet was grown by shifting cultivation not far from Agadez as recently as up to the French occupation of Ayr.

245 In addition to the species of grain mentioned above there is one very important plant which can be grown without artificial irrigation, namely the date palm. In Tasilé-n-Ajjer there are river valleys

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

243
415

Fig. 144. *Kel Ewey* woman winnowing grain by shaking it in a plaited bowl. Ayr. Iferwan.

243 large mortar. Winnowing of cereals is performed by shaking the seeds in a plaited bowl or tray to let
[415] husks and other impurities be removed by the wind (Fig. 144).

251 The Northern Tuareg use the following means for storing of crops:— (1) *taddat*, that is a skin bag
343 containing grain, dates, and the like, hidden under stones and rocks in the mountains; (2) *égend*, or *anu*, an underground storeroom lined with mats. It is used for cereals, including wild seeds, and is found both among agriculturists and pastoralists (Fig. 146); (3) *tarassana*, a grain silo built from stones and mud (Fig. 145). Nowadays such storerooms are not only used by agriculturists but also by pastoralists. However, this type of storeroom is said to have been introduced to Ahaggar with the introduction of irrigation agriculture about a hundred years ago, and was originally unknown to pastoral Tuareg.

[136] Among the *Kel Ferwan* Tuareg all storerooms for cereals are known as *tédengewt*. The storing of vegetable food products in skin bags covered with stones or hidden under rocks is apparently unknown – perhaps because of the numerous small rodents and the rich insect life which includes numerous white ants. Underground storerooms like those of Ahaggar are used by agriculturists and pastoral Tuareg alike. They are frequently excavated so deeply that they can hide a grown man standing in

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

492 171 an ancient North African custom. It is the method generally applied by the Tuareg and those Northern Arabs who use saddles of the *térik* or *tahyast* types; it is also practiced among the Moors of Mauretania (cf. Monteil 1952, Puigaudeau 1945, ill. p. 128–129), and is known to the Tebu (Cline 1950, p. 34). It would appear that the use of nostril rings for riding camels has much the same distribution in North Africa as have saddles of *térik* or *tahyast* types including the Moorish saddle, which is also placed in front of the animal's hump.

The Tuareg halter made of iron or metal shackles and used in connection with the nostril ring so that the camel is controlled by means of a double rein (*akeskabbu*; cf. p. 73, Fig. 50–52), is perhaps a combination of two originally different systems, for the Tebu use this peculiar halter without any attachment to a nostril ring, the camel being controlled by a single rein combined with the halter (cf. Le Coeur 1950, p. 133, pl. XXIX Figs. 111–112 & Cline 1950, p. 34).

● 136 174 114 Much has been written on the history of the camel in North Africa, and I do not want to take up this question in great detail as I can add very little to what is already known. René Basset's theory that the camel was first introduced by Arabs of the first invasion (Basset 1907) is contrary to all historical information, for we know with certainty that the camel was known to the Berbers before the Arabs arrived. Contemporary with Basset it was pointed out by Flammand, that skeletal remains of camels from North Africa proved the exsistence of these animals as early as "les temps quaternaire moyens" (Flammand 1907). But while Flammand states that the camel disappeared with a more humid climate, Cauvet later tried to substantiate the theory that the camel did not disappear, but continued to exist further south in Africa. Thus, he claims, the southern camel-breed descends from the ancient camel found in Africa even during the mio-pliocene of the tertiary period, while the northern breed was introduced by the Arabs (cf. Cauvet 1925–26, I, p. 15 ff.). I can agree with Cauvet's latter statement regarding a connection between northern camels and the Arabs, but his theory of the existence of the one-humped camel in Africa since tertiary time is most difficult to accept. The camel breed which existed in Africa prior to the Arab invasions was no doubt comparatively recently introduced from Asia. Barth pointed out that the camel came to North-western Africa about the beginning of the Christian era (Barth 1849, I, p. 3 ff.). This theory has later been supported by many scholars, notably by Gautier (Gautier 1928,, p. 99 f., ed. 1946, p. 129 ff.; 1942, p. 190 ff.). Quite recently the various problems connected with the history of the camel in North Africa have been re-examined by Walz. He largely accepts Barth's theory of its introduction in antiquity, but also points out that the camel, which seems to appear in Egypt about 500 B.C. or somewhat earlier, may have been introduced to southern parts of Africa via the Bab-el-Mandeb Straits at an earlier date (Walz 1951, p. 29–51; 1954, p. 45–87).

Gautier states that the Romans had a certain responsibility for the introduction of the camel into North-Africa, though he also claims that it was introduced by the Berber-speaking *Zenata* tribes (Gautier 1942, p. 209 f., 227). It is to be doubted that the Romans introduced the camel into North-Africa, and on the whole it seems as if the Romans have influenced Tuareg culture very slightly. It is difficult to point to any definite traits of material culture taken over from the Romans, though Foucauld states that certain lamps of Roman form are found in Tasilé-n-Ajjer (Foucauld 1951–52, III, p. 1399). A fair number of Latin words can be proved to exist in Tuareg dialects. This fact is

174 177